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TITLE: The evaluation of an innovative dental nurse training pilot scheme

Running Title: Evaluation of innovative dental nurse training pilot

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Abstract

Introduction: Dental nurses traditionally train in either hospital or practice. A London pilot scheme provided exposure to both settings to explore the potential for dual training. This evaluation examined the motivation, experiences, career expectations and initial careers of trainees.

Methods: A questionnaire-based survey at two time points during the training. Descriptive and inferential analysis conducted using SPSS version 22.

Results: Overall training was rated highly (7-9) by 100% of trainees with positive views of the concept of dual training. There was also a preference for full-time work in primary care with career decisions strongly influenced by personal factors - financial stability, work-life balance and professional development. Rotating between settings proved challenging so did perceived low wages; lowest job satisfaction scores were for physical working conditions and remuneration. However, advantages included high levels of preparedness for team working with most recognising the dental team has shared responsibilities. A high proportion of trainees were employed in primary care (57.8%) post-qualification. Strong interests in gaining further qualifications were reported (92.3%).

Conclusion: The outcome was generally positive with evidence of academic success, employability, commitment to a career in dental nursing and sufficient support for training in multiple settings to be introduced into future dental nurse training.

INTRODUCTION

Dental Nursing in the United Kingdom

Dental nursing in the United Kingdom (UK) currently leads the world in becoming professionalised, requiring dental nurses to be fully trained and registered, following a limited period of training.^{1, 2} The General Dental Council had 55,691 dental nurses on its register as of January 2017,³ making up the largest group of registrants at 51%. The vast majority of registered dental nurses have trained within the UK (>99%), and 5,140 qualified nurses were added to the register in 2015.⁴ The scope of practice of dental nurses is clearly defined,⁵ including core functions and additional skills that may be developed post qualification. In 2008, it became mandatory for all dental nurses working in the UK to register with the General Dental Council,² except student dental nurses on an accredited training course who are not required to register until after qualification. All dental nurses are also required to undertake continuing professional development (CPD) once they are qualified and registered with the GDC.⁶ Proponents of compulsory registration argue that it raises the profile of dental nursing whereas opponents feel it may have added to the existing recruiting and attrition problems.⁷⁻⁹

The dental workforce, once trained, is an important resource and it is necessary to understand the motivation and career expectations of each section of the workforce; however, there is limited published research on the dental nursing workforce.¹⁰⁻¹³ There is some evidence that the motivation for their choice of a career in dentistry has parallels with the dental profession as a whole, whereby 'features of the job' form an important element.¹⁰⁻¹² Innovation in training to provide experience across both sectors of dentistry in their training will provide dental nurses with broad training experience and should increase their preparedness to work across settings and thus enhance their future career prospects. Research amongst hospital-employed dental nurses suggests that 'opportunity to progress in dental sector' was the greatest influence on their career decision.¹² Evidence on career expectations from surveys of existing programmes suggest that dental nurses wish to work across primary and secondary care settings, within the NHS and private sectors,^{10, 13} and there is strong interest in further professional development,^{12, 13} sometimes leading to dental hygiene and therapy.¹³ Retention of dental nurses, as with general nursing is a professional challenge, with the GDC experiencing significant turnover in this sector of the dental profession.¹⁴⁻¹⁶ Evidence from a survey of preregistered dental nurses in Scotland suggests that there may be a mediating role for work engagement and personal accomplishment in their stability of remaining in the job.⁷ Lack of job satisfaction has also been shown to be a key determinant of intention to leave.¹⁷

There is great emphasis on professional teamwork across healthcare in general, and dentistry in particular. The General Dental Council guidance on 'Preparing for Practice: Dental Team Learning Outcomes',¹⁸ places great emphasis on coherence of education across

dental team members, including dental nurses. Inter-professional education may improve professionals' abilities to work more effectively in a team.¹⁹⁻²² Furthermore, the role of the dental nurse is expanding within the dental team to include elements of clinical care notably the application of fluoride varnish.^{5, 23} As the role of dental nurses have developed and their jurisdiction expanded,^{5, 24} so it is necessary that their education and training develops in parallel. This is the case for the whole dental team and recent changes have seen dental students increasingly training across primary and secondary care settings.^{25, 26} Theoretically, this should also prove beneficial for dental nurses.

Current arrangements allow for training in one setting only, either dental hospital or dental practice, with little or no exposure to other settings. However, the vast majority of potential employers are currently based in primary care. Training in primary care may not always include any exposure to the varying team and complex cases more commonly found in secondary care. Health Education England (HEE), which leads on dental education across London, established a pilot dental nurse training scheme to address the issues highlighted by a single-setting training. **This was a shared training pilot between primary dental care practices and a hospital trust in North East (NE) London which have been accredited to run National Examining Board for Dental Nursing (NEBDN) training courses and comply with the new NEBDN regulations.**²⁷ Trainees worked part-time at a dental practice and part-time at the hospital provider; alternating between sites weekly. Trainees spent one day per week on didactic training at the hospital provider. The aim of the pilot, as outlined by London's Postgraduate Dental Dean, was *"to provide trainees with a broader training programme with exposure to the rich but varying experiences that can be found in the different settings and help to produce a workforce that is better prepared"*. It proposed to provide better value for money by doubling the number of trainee posts available. Ultimately, the pilot hoped to increase partnership between primary and secondary settings in order to produce a workforce that will improve patient care and experience, with nurses fit to work in all settings and taking on board the changes to the delivery of dentistry by the future workforce. Further details can be found in this paper.²⁸

Aim and Objectives

The aim of this research was to examine the motivation, experiences, initial careers and career expectations of dental nurses trained through this pilot scheme, over the course of their training. Stakeholder views on the pilot training initiative itself are reported elsewhere.²⁹

The main research questions were:

1. What are the motivation, career expectations and career decisions of the dental nurse trainees entering the pilot scheme and over time?

2. What are their experiences of the training and education, preparedness for team working, their job satisfaction and views on retention following the pilot scheme?

METHODS

This was a quantitative research study using a cross sectional survey looking at the dental nurse trainees cohort longitudinally. This approach was informed by previous dental workforce research.^{10, 12, 30-32} It sought to explore the feasibility of training dental nurses across different settings. Ethical approval for the study was obtained from King's College London (BDM/14/15-15).

All dental nurse trainees on the pilot scheme were invited to take part in the research study in the first term of their training. Trainees were sent personally addressed letters from HEE inviting them to take part in the study along with the information sheet. A researcher (OA) attended a session with trainee in their first term to answer questions, obtain consent and to administer baseline questionnaires. Based on previous research, the questionnaires explored their motivation for a career in dental nursing,^{10, 30, 31, 33} career expectations and influences: short- and long-term,¹² amended in light of current GDC guidance on additional skills,⁵ retention³⁴ and job satisfaction,¹⁷ team working views^{21, 22} using the Readiness for Interprofessional Learning Scale (RIPLS)³⁵ modified for use in dentistry and the Dental Roles and Responsibility Scale²² and demography.^{10, 30, 31, 33} Follow-up questionnaires were distributed to trainees immediately after qualification in order to investigate possible changes in their views over time; linked using a unique identified code to help maintain anonymity. Data were entered and analysed using Statistical Package for Social Sciences (SPSS) software. Descriptive and inferential statistics were used to examine the data given the small sample size.

RESULTS

Thirty trainee dental nurses were recruited onto the pilot scheme which commenced in August 2014. Thirteen trainees departed the scheme during the course of the year due to personal circumstances, pay and working conditions, illness amongst other reasons. Of the 17 remaining trainees, two of them did not complete their Records of Experience (ROE) by the deadline and were therefore not entered into the examination. Fifteen trainees were entered into the final NEBDN examination, all of whom passed the written exams at first attempt (100%) while fourteen of them passed the practical exams at first attempt (93.3%). Over half of trainees who qualified (57%; n=8) work in primary care with 6 employed at their training practices; 1 at a wholly private practice and 1 in a mixed NHS/private practice. A further 14% (n=2) were employed in a dental hospital, 14% (n=2) work with a dental nursing agency and there was no information on the destination of two trainees (14%).

Demography

Fourteen students participated in the survey in Term 1 and 13 students in Term 3. Eleven students participated in both surveys. Participants were mainly mature students (average age 32 years) who had caring roles living with their partner/children or in their parental home. The group had an array of qualifications and previous careers. Half of respondents were black African and a quarter were Caucasian.

Motivation for a career within dentistry

The most notable factors which influenced their choice of a career within dentistry was their desire to work in healthcare and with people, to provide a public service and that it leads to a recognised job with professional status (Figure 1). Over the course of the training the most prominent influencing factor changed from the desire to work in healthcare to job security.

[Insert Figure 1]

Education and Training

Overall training and the educational element both had notable improvements in ratings over time; with 100% (n=13) of trainees rating both 7 and above in Term 3. Training at dental practice scored lowest initially followed by hospital training however these also had improvements over time. Trainees' written views of the scheme in term 1 highlighted good elements of the concept and the valuable experience gained across two different settings but focused largely on the problems that needed addressing. Their views were more positive in Term 3, paralleling the shift in training ratings.

Team working

Measured using the Readiness for inter-professional learning (RIPLS) and the Dental and Dental Care Professionals Roles and Responsibilities (Dental R&R) scales.

[Insert Table 1]

The mean scores for the RIPLS scale as well as the subscales within it suggest positive attitudes towards inter-professional learning and these results are similar to those from another study.³⁶ The majority also provided an expected response in line with their scope of practice while recognising some responsibilities are shared by the dental team including building a rapport with patients and giving advice.

Job Satisfaction and retention in dental nursing

A score of 5 or more on the 7-point scale indicates job satisfaction; 67% of trainees were satisfied with their job (mean 5.27). Mean score for the overall satisfaction domain was 5.38, whilst the two lowest mean scores were for remuneration (2.93) and physical working conditions (4.85) (Figure 2). The majority (84.6%; n=11) reported that they did not often think of quitting their job nor did they plan to change jobs within the year following the

survey (92.3%, n=12) and their long-term intentions were positive (69% said they did not intend to leave dental nursing for a different career).

[Insert Figure 2]

Career Expectations

The majority of trainees knew what they planned to do at the end of the training, both in term 1 (85.7%, n=12), and term 3 (91.7%, n=11) with no significant difference over time. In term 1, 85.7% of trainees wanted to work in hospital and 28.6% in primary care. This changed to 61.5% and 53.8% respectively by term 3. There was also a trend for trainees to be more certain of their overall career plans over time; with a preference for full-time work in primary care. Their career decisions strongly influenced by both personal and personal and career-related factors e.g. financial stability, work-life balance and professional development. Trainees also had a strong interest in gaining additional skills mainly in oral health education and prevention, the application of fluoride varnish.

DISCUSSION

This pilot contributes to knowledge in this field as it reports on issues relating to an innovative dental nurse training scheme. This scheme seemed to attract an older cohort of trainees than usual and more of them had caring roles (as spouses, partners and parents) which seemed to have an impact on their ability to remain on the course especially from a financial viewpoint. Although it is unclear why, it may be related to how the scheme was advertised and perhaps some confusion about what it entailed. Nevertheless, everyone passed written exams and all but one the practicals at first attempt, these are considered better than the national averages which sits around 80 - 85%. Whilst the course can be viewed as having supported this success, the high rates of attrition at the beginning may also have meant that only the more committed trainees remained in the programme and of course numbers are small.

It was interesting to note the increase in the proportion of those wanting to work in primary care over time. This highlights a possible benefit to dual training. Trainees' experience of working in primary care as part of this scheme may have demystified primary care employment and addressed pre-existing misconceptions. This is advantageous especially in the context of there being more jobs for dental nurses in primary care. Moreover, Sembawa et al.¹³ found that solely hospital-trained dental nurses were more inclined to only want to work within the hospital. Trainees' divergent views on the training they received also became increasingly positive towards the end.

Trainees in this study support the view that inter-professional learning is beneficial in line with recent research.³⁶ However, it must also be recognised that that professional identity

and its development are issues that should be given full consideration by educators who are developing initiatives that involve inter-professional education.²² This is because some professions may feel threatened by the idea and may not see its value, thereby undermining a future in which a team-based approach to healthcare is vital.

Retention of dental nurses has been highlighted as an important dental workforce issue in the past with high staff turnover reported.^{37, 38} Research has shown that the development of work engagement amongst dental nurses (e.g. helping them feel inspired by their work), job resource beliefs (e.g. beliefs in their ability to use their skills in practice) and personal accomplishments (e.g. positively influencing people's lives) may help them feel they are integral to how the team operates and reduce intentions to leave the job.⁷ Whilst the initial retention rate for trainees was poor, with almost half departing following early experiences relating to pay and working conditions, this stabilized over time. In the short-term, most trainees did not intend to find another job or change jobs, they also showed strong interest in additional skills and qualifications which is positive for long-term retention within dental nursing as a career. These views are generally more positive than those reported by Turner et al.¹⁷, who found negative attitudes towards retention amongst qualified dental nurses in the UK. It is possible that this may be associated with the length of time those nurses had spent in practice (a mean of 15.7 years) therefore they may have encountered more challenges to their desire to remain in the profession compared with trainees from this scheme who were new to dentistry. Most importantly, recent changes including the introduction of compulsory GDC registration for dental nurses and expansion of their scope of practice mean that the future is potentially more positive for a career in dental nursing. With regards to career development, the majority of pilot trainees had plans for additional qualifications which could be as a result of being in hospital and possible exposure to additional, extended skills being used widely by the dental nurses in hospital.

Implications for future practice and research

Future dental nurse training should consider the concept of exposure to a variety of settings even if a large proportion of training is undertaken in a single setting as this has been shown to have a positive overall impact. It is important for future research in this area to collect comparative data regarding single-site trained dental nurses (dental hospital only or dental practice only) across all relevant domains simultaneously in order to ensure more detailed comparison and highlight benefits or otherwise of this multi-site training initiative. Additionally, this study like others,^{22, 36} highlights the inadequacies of the roles and responsibilities subscale of the RIPLS instrument. This instrument therefore requires further work.

Study Limitations

This study involves a small number of dental nurses trained on an innovative scheme that took place in London therefore findings from this study may not be transferable as the

implementation of this exact model of training may not necessarily be transferable. Nevertheless, as a study that explores the feasibility of the concept of training dental nurses across settings, it has shed light on the experiences of trainees and gives insight into various outcomes. Similar to our findings that support the concept of training across more than one site, a recent evaluation³⁹ of a pilot scheme to train foundation dentists across two sites rather than the traditional one site, reports that trainees had positive perceptions of the concept and that it enhanced their learning experience.

Conclusion

Whilst the introduction of this pilot which involved several dental practices and a dental hospital, presented a number of challenges, the outcome was generally positive with evidence of academic success at the final examinations, employability, commitment to dental nursing as a career and sufficient support for this concept to be embraced in future training initiatives.

Conflicts of Interest

Two of the authors (EJ and SM) had the shared vision, developed and delivered this concept of training dental nurses in London across both primary and secondary care settings. Furthermore, EJ was the former Postgraduate Dental Dean for Dentistry at Health Education England, London when HEE funded this pilot scheme. HEE also commissioned this evaluation which was undertaken by TA and JEG at King's College London. Both EJ and SM were interviewed as part of the stakeholder group associated with this pilot (findings reported elsewhere). Finally JEG was chair of the Dental Workforce Advisory Group for Health Education England and Honorary Consultant in DPH for Public Health England. The views expressed in this paper are those of the authors do not represent the views of these organisations.

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